

G. hoggii, *G. howittii*, *G. spenceri*, *G. mediolineata*, *G. munda*, *G. adae*, syn. *frosti*, *G. fletcheri*, and *G. sugdeni* were obtained.

BOTANY.—Mr. H. T. Tisdall reports that over sixty dicotyledonous plants were collected in bloom. In addition to those mentioned in the general report the following may be recorded :—*Hedycarya cunninghami*, *Pittosporum bicolor*, *Cryptandra hookeri*, *Loranthus celastroides*, *Pimelea ligustrina*, *P. linifolia*, *Cassinia longifolia*, and *Veronica perfoliata*. *Correa æmula*, *Tetratheca ciliata*, and *Atherosperma moschatum* were obtained in fruit. About a dozen monocotyledonous plants were seen, of which the more noticeable were *Dianella revoluta*, *Xerotes brownii*, *Juncus parviflorus*, *Cladium* (*Gahnia*) *psittocorum*, and *Carex paniculata*. Among Cryptogams were about twenty-two species of ferns, including *Aspidium molle*, *Hymenophyllum nitens*, in addition to those already mentioned ; also *Selaginella preissiana* and *Dawsonia superba*, the tallest Victorian moss.

Though the scientific results of the excursion may not be very striking, it must be borne in mind that country such as we were in requires time to thoroughly explore, as it is impossible in such a short time as three days to get far from the beaten tracks, consequently only the more prominent objects were noticed. There are also other portions of the district where time could be profitably spent—such as the valley of the Graceburn, Contentment Creek above the falls, Morley's Creek, and Myrtle Creek on either side of the Black Spur—and we trust that the advantages of a camp on the Watts will not be forgotten when future excursion lists of the Club are being drawn up, though it may be that before our next visit to the locality the site of our camp will be beneath the waters of the projected Maroondah reservoir. Finally, we have to thank the officers of the Metropolitan Board of Works for granting us the privilege of exploring their reserves, and Mr. Almond, the resident overseer, for his courteous treatment of the party.

F. G. A. BARNARD.

A TRIP TO THE RICHMOND RIVER DISTRICT.

BY A. CAMPBELL, JUN.

PART II.—BUTTERFLIES AND BIRDS—*continued*.

Read before the Field Naturalists' Club of Victoria, 13th August, 1900.)

A noticeable feature of the scrub is the number of trees bearing fruits, which form the staple food of so many of the feathered tribe. A Fig tree is always a sure place to get a bag of birds, and going thither with a good gun one has only to wait and watch for them moving about among the broad leaves. In summer time especially the trees are alive morning and evening with a miscellaneous collection. All are in such a hurry that half-

eaten fruit is dropped or knocked off, and falls to the ground in considerable quantities. The fruits, measuring as they do an inch or more in diameter, cause quite a stir as they speed through the leaves on their downward course, and fall with a sharp smack on the leaf-covered ground. After the report of the gun has died away, all is silence for awhile save for an occasional Regent- or Cat-bird that will dart away into the undergrowth; then presently a large Fruit Pigeon will commence again to flop about among the foliage, and soon the whole congregation are as busy as before with their meal.

The fruit of the Native Tamarind, on which the birds become very fat, ripens in the early spring and summer months. The large Topknot Pigeon, *Lopholæmus antarcticus*, particularly comes in numbers to feast upon the fruit. This bird, the largest of the pigeons, is, however, quite a bird of the air, for in flocks of from six to twelve or fifteen it is seen ever on the move, and rarely appears to settle except at feeding time. The two other large fruit-eating pigeons are the Purple-breasted, *Megaloprepia magnifica*, and the Bald-headed, *Columba leucomela*, but they never leave the precincts of the scrub, and may be considered of all pigeons the most shy and difficult to obtain. The Bald-headed species takes its name from having a white head and neck, the under parts also being white, but the back and wings are black, with a metallic sheen. This bird is the more often seen in parties of six or eight, and is continually moving its quarters, but the Purple-breasted is a strictly local species, and never more than a pair of old birds is seen together. They live and breed about the one spot, and, once you know the place, with a little patience the birds can generally be found. The first idea you get of their proximity is a guttural "quok" up in the tree tops, but the bird remains immovable on its perch, and it is next to impossible to find it, but, if feeding, then you may discern it creeping out along the branches to reach its food; when all within reach has been devoured it will flop clumsily into the next clump of foliage, and this act usually betrays its whereabouts. If a front view of the bird be obtained the rich plum-coloured breast stands out prominently, but otherwise the green of the back and wings and the yellow of the abdomen assimilate with the colour of the surrounding foliage. The various calls of the Fruit-Pigeons, and, in fact, of all the birds in the scrub, are quite a study in themselves, and are somewhat difficult to set down on paper; but the call of the *M. magnifica* is very remarkable, and may be described by the words "wallock-a-woo," uttered in a deep voice. At the first syllable the bird seems to swallow the sound, thus making a peculiar guttural noise. The only call uttered by the *C. leucomela* is a deep "booh." These two pigeons, as well as the Topknot, being very large, are also fine eating, and weigh quite 20 ounces

each when dressed. Information regarding the nidification of the Fruit-Pigeons is somewhat scanty. All the species lay but one egg. The nest of the Purple-breasted species is toughly made of vine tendrils, but all the others are loosely constructed of sticks.

Two smaller Fruit-Pigeons are the Brown or Pheasant-tailed, *Macropygia phasianella*, and the Red-crowned, *Ptilopus swainsoni*, the latter being worthy of a first place for beauty of form and colouring. On its breast is a brilliant splash of orange and light red, shading into yellow on the under tail coverts. The throat and chest are covered with small scale-like feathers of a greyish-green colour, while the back is also green, with mottlings of yellow on the shoulders, and the head is crowned with a lovely patch of pink, set off with orange irides and a flesh-coloured beak. This little bird has several calls; the best known perhaps is a high-pitched "coo" repeated thirteen or fourteen times, beginning slowly and increasing the pace as it proceeds, but another is a sustained "coo-coo," with accent on the first, but cutting the last "coo" short. This little pigeon, as well as the other species, is found very difficult to skin, and it is only with great care that a presentable specimen can be prepared. In spring-time all the birds are very fat, and some have been known to burst asunder on striking the ground after being shot. The Brown Pigeon is of a sombre colour, with a little metallic sheen on the feathers at the back of the neck; it possesses a very large tail, and has a curious habit, when alighting on a branch, of putting it up, then down again, as if endeavouring to balance itself. It is not a shy bird like the other pigeons, for three or four sitting together on a low branch by the roadside may be approached without offering to move; nor does it feed exclusively on fruit. It is no uncommon thing to flush a party off the ground, and as they rise, spreading their large tails, they offer a good mark for a sportsman. The noise made by the Brown Pigeon is very similar to that of the domestic pigeon, and it possesses a "coo-oo" very similar also. There are two other species to mention, but they are both seed-eating birds. The well-known Wonga-Wonga, *Leucosarcia picata*, is often located towards evening by its continuous high-toned "hoo hoo" call, interrupted now and again for a second or two while the bird, no doubt, picks up a morsel; and the sturdy form of the Little Green Pigeon, *Chalcophaps chrysochlora*, is always seen darting out of the scrub at feed-time and off to procure its meal.

This institution of feed-time is well kept, and the regularity with which the various birds make to their accustomed feeding grounds at daybreak and again in the afternoon is very striking. The Red-crowned Fruit-Pigeon and the Regent-bird, *Sericulus melinus*, principally are in the habit of feeding on the black

berries of the Inkweed, *Phytolacca*, which grows so profusely in the clearings when unchecked. The morning's meal is over by about nine o'clock, when numbers of the birds are seen going back into the scrub, and during the heat of the day not one is found outside. But when four o'clock comes round they are all out once more, and feed till dusk. The Little Fruit-Pigeon comes out singly or in pairs, but it is a sight to be remembered to watch a flock of perhaps a dozen Regents, among them being perhaps as many as four of the gorgeous males. The greater number, however, are the drab and grey mottled females and immature males. The female is distinguished by having the forehead and the nape of the neck black. It is generally supposed that the young male is three or four seasons old before it dons its full livery. Occasionally a bird may be noticed that is undergoing the change, and on the head and neck and in the wings the yellow is beginning to appear. In flight the perfect male can be at once distinguished by the golden-yellow patches on the wings.

The Regent-bird belongs to the family of Bower-birds. Its nest is merely a frail platform of sticks situated in a bunch of creepers, and its eggs resemble very much those of the Spotted Bower-bird, *Chlamydodera maculata*, but to the ground colour instead of being greenish is a yellow tint. Apart from the nest, the Regent builds itself a bower or playhouse on the ground, and one in use I had the pleasure of examining was a very neat structure, situated within a circle of Lawyer Cane roots, in a clear space about 4 feet in diameter. The walls of the bower, which were about 8 inches long and 6 inches high, were fixed into a layer or bed consisting of small pieces of stick so tightly trampled down that they were quite compact. This bed was in the form of an oval, measuring 22 inches across one way and 19 inches the other. I may mention that this is quite an unusual addition, for the walls as a rule are fixed into the ground, and a bed of sticks of the dimensions just given is very rarely seen. The first time this bower was noticed three birds, all drab-coloured, were playing in it; each carried an empty snail's shell, and in turn went into the bower, and after bobbing up and down a few times with half-opened wings would toss the shell out over the wall to be picked up by one of the others, which would drop its own for the purpose. The two birds remaining outside performed various antics, brushing the ground with their wings, as a consequence of which the soil within the enclosure of cane roots was quite bare. This exhibition did not last long, for a dog appearing on the scene, unfortunately, scattered the three interesting performers. I visited the bower several times subsequently, but the birds were not at home, and all I noticed was that three or four young purplish-tinted leaves were placed in the centre, and the three shells were laid near. I could see that each day the withering leaves

were replaced by freshly plucked ones. The only calls the Regent-birds have are a single whistle, and a squeaky "whit whit" when alarmed.

The Green Cat-bird, *Aelurædus viridis*, is another member of the Bower-bird family, and is common in the scrub. It takes its name from its loud cat-like "mew-ow" call; towards dusk sometimes several congregate and make a considerable noise. The eggs are of uniform creamy-yellow colour, and the nest is a more substantial structure than the other Bower-birds build. The Cat-bird is very partial to the fruit of the *Canthium* tree; in company with the Regent, the Fig-bird, the Oriole, and sometimes the Satin Bower-bird, *P. violaceus*, it may be seen devouring the small yellow berries, which grow in clusters among the leaves.

Three members of the *Campophaga* family were noticed. The pretty Barred-breasted, *Graucalus lineatus*, and the *Campophaga jardini* are very shy, and rarely leave the tree-tops, but the Black and White, *Lalage leucomelana*, is a frequenter of the more open country. The Rufous-breasted Shrike-Thrush, *Pinarolestes rufigaster*, is essentially a bird of the scrub, and the Black-faced Flycatcher, *Monarcha carinata*, also. The Large-headed Robin, *Pœcilodryas capito*, and the Large-billed, *Eopsaltria magnirostris*, are seen; the latter takes the place of *E. australis* in our southern districts, but differs from it in having a heavier bill and a brilliant yellow rump, which shows plainly when the bird flies.

The small fry are for the most part the Large-billed and the Yellow-throated Scrub-Wrens, *Sericornis magnirostris* and *S. citreogularis* respectively, together with the Brown Fly-eater, *Gerygone fusca*. The nests of the larger *Sericornis* and of the *Gerygone* are common sights, built of beautiful green moss, and hanging suspended from a Lawyer Cane. But the Scrub-Wren's nest is a very bulky pear-shaped structure, quite 30 inches in length, whereas the *Gerygone*'s home is very neat, and not more than 7 inches long, including its tail-like appendage. The Yellow-throated Scrub-Wren lays two large buff-coloured eggs, but is often ousted from its home by the smaller Large-billed species, which never builds a nest if it can "jump" a ready-made one. A nest was recorded containing the extraordinary number of eight eggs, comprising two sets of three each of the Large-billed and one clutch of the Yellow-throated. The conclusion drawn is that a *S. magnirostris* had turned out the rightful owner, but was itself ejected by another of its own species. I hardly think the last bird had the best of the bargain with eight eggs to hatch. These large nests are often the foster-home for the egg of the Fan-tailed Cuckoo, *Cacomantis flabelliformis*.

The Whip-bird, *Psophodes crepitans*, the Yellow-eared Honey-eater, *Ptilotis lewini*, and the Rufous Fan-tail, *Rhipidura rufifrons*, are three birds very plentiful indeed, and they are three species

also found within a short distance of Melbourne, in the cool retreats of the Dandenong Ranges. The honey-eater is a noisy bird, and often comes into the gardens, where its moss-made nest, containing two white sparsely-spotted eggs, is sometimes found in the lemon trees. The Ground-Thrush is represented here by the Russet-tailed species, *Geocichla heinii*.

The "Big Scrub" is the home of the Rifle-bird, *Ptilorhis paradisea*, which belongs to a subdivision of the Birds of Paradise. There are three species of Rifle-birds in Australia, all frequenting the eastern coastal districts, but this species has the most southern habitat. It is not adorned with plumes of any description, but the dress of the male bird, nevertheless, is very handsome velvety-black, bespangled on the crown of the head and chest with scale-like feathers of a brilliant metallic green, while the young male and the female wear coats of a protective brownish colour. The Rifle-bird hunts for its food about the tree trunks, and may be seen running up the stem, prying into every crevice with its long sickle-shaped beak, or disappearing into the holes in search of insects, much after the manner of a Tree-creeper. Its call is harsh and easily recognized. There can be no mistaking the measured "yass yass" of the male bird, uttered so deliberately, with a pause of a second or two between each syllable. A short single "yass" locates the female, while a young male perhaps may attempt the double call, but it is hurried and unpractised. For many years the nest and eggs of the Rifle-bird remained undiscovered, till at last, only the season previous to my visit, they were brought to light by the energy of Mr. Bailey and a friend. The eggs proved to be as uniquely marked as those of the other two species, and the nest was curiously ornamented with pieces of shed snake-skin.

At the time of my visit to the Scrub the majority of birds had finished nesting, and very few eggs were obtained, but there was reason to believe the season had been very early, for the previous winter, being very mild, had induced the birds to begin nesting sooner than usual; whereas in December and January of the previous season the Rifle-bird's and several Fruit-Pigeons' nests were taken. But about Wollongbar the scrub is being cleared off considerably, and consequently the birds are moving back. One week I spent, at the invitation of Mr. H. R. Elvery, who is an enthusiastic oologist, at his selection near Alstonville, where the birds were more numerous and less disturbed. One bird pointed out to me was the Albert Lyre-bird, *Menura alberti*, which was heard in the mornings whistling away along the creek, imitating other birds' calls to perfection. The male of this Lyre-bird does not possess the two large feathers in the tail as found in the other two species. Among the lilies in the scrub occasionally are seen the leaf-made egg-mounds of the Brush Turkey, Tale-

gallus, from one of which Mr. Elvery took no less than 35 eggs in a season. Several pairs of the two ground birds, *Pitta strepitans* and *Orthonyx spinicaudus*, were also here noted. Many nests have been taken by Mr. Elvery of both kinds, and he has supplied some very interesting notes. The *Pitta* usually builds its nest in the fissures at the butts of Buoyong and Bean trees. The covered-in structure, standing 12 inches high and 8 wide, is neatly made of green moss, dead leaves, and bits of stick, while the exterior is ornamented with a few black skeletons of Staghorn leaves. The entrance at the side is 3 inches in diameter, and often a small platform of sticks and rotting wood leads up to it. The eggs, four in number, are white, covered with small black spots; it is noticed that one egg in a clutch is not so heavily marked as the remaining three. The *Pitta* has a very striking plumage of brilliant colours, for the upper surface is green, with beautiful light-blue on shoulders and tail coverts, and the under surface of brown is set off with a bright splash of vermillion on the abdomen. Its food consists of snails, which it finds upon the ground, and soon frees of the shell by hitting on a piece of stone. The call consists of three whistling notes, the last of which is a tone or two higher than the former two, and accents are on the first and third. It is a call easily imitated, and by so doing the bird can be brought within gunshot. The *Orthonyx* lays two pure white eggs in a nest made of dead leaves and bits of decaying stick, about the same size as the *Pitta*'s, although the bird itself is much smaller. The nest is placed on the ground, against a stone or a log forming suitable protection, and is always in the vicinity of rotting fallen timber.

Along the creek live a pair of Yellow-necked Bitterns, *Butoroides flavicollis*, owning a stick nest 14 inches across, situated on a branch overhanging the water, from which many clutches of three eggs each have been taken.

The last bird to be mentioned is, however, not of least importance. It is the Scrub-bird, *Atrichia rufescens*, quite a unique species, measuring about 6 inches in length, with plumage of a rich brown, each feather being finely barred with transverse lines of black, relieved only by a fawn-coloured throat. A solitary male bird will frequent a mass of fallen timber, or an entanglement of Lawyer vines, and from its hiding place pour forth all descriptions of sounds, for it is an accomplished mimic. But the curious thing about the species is that the female has never been found. Collectors have shot dozens of specimens, but all proved to be male birds. However, one important step has been taken towards determining their economic history, for in October, 1898, a nest and two eggs, identified as belonging to the species, were taken by Mr. S. W. Jackson in the Clarence River district. The *Atrichia* approaches in relation nearest the Bristle-birds. There is

a larger species found in Western Australia, but practically less is known of it than of the Big Scrub bird. Surely Australian ornithologists have an interesting point to settle yet by bringing to scientific light the female *Atrichia*.

DESCRIPTION OF SOME NORTH AUSTRALIAN BIRDS' EGGS.

BY D. LE SOUEF, C.M.Z.S.

(Read before the Field Naturalists' Club of Victoria, 19th Nov., 1900.)

COLLYRIOCINCLA PALLIDIROSTRIS, Sharpe, Pale-headed Shrike-Thrush.

These birds have a beautiful clear note, like the other members of the same family, and are found in the north-eastern portion of Australia, but their exact limit is difficult to define. They frequent scrubby country or small open patches in the scrub, and the site they choose for their nest is generally on a thick bunch of mistle-toe or similar place. The structure is lightly built of stalks of grass and vine tendrils, and lined with fine, dark-coloured tendrils, and measures—internal depth, $2\frac{1}{4}$ inches; external, 4 inches; internal breadth, 3 inches; external, $5\frac{1}{4}$ inches. The eggs are white, with markings of varying shades of burnt sienna scattered over the surface, but mostly over the larger end, especially on the apex; those under the surface are lilac. The markings vary in size on different eggs—some being few and large, and others small and numerous. The shell is slightly glossy, and they measure—(a) 1.12 x .80 inch, (b) 1.6 x .78 inch, (c) 1.10 x .80 inch. The nest and eggs were found near Cooktown, Queensland, on the 19th of November, 1899, three being the full clutch. This bird is lighter in colour than *C. brunnea*, and is easily distinguishable from it.

SERICORNIS FRONTALIS, Vig. and Hors. (*S. minimus*, Gld.), White-browed Scrub-Wren.

In the British Museum Catalogue this species is made synonymous with *S. frontalis*. As is well known, birds found in Northern Australia are generally smaller than those of the same kind found in the more southern portions of the continent, and this bird is probably a case in point. As will be noticed, its eggs are considerably smaller than those of *S. frontalis* taken in the Clarence River district of New South Wales; then also *S. frontalis* (*S. gularis*, Legge), found in the Kent Group of islands in Bass Straits is a large bird again, and its eggs correspondingly so. The northern variety, like the others, frequents scrubby country, and is generally to be seen on or near the